

Appl. No. 10/709,921
Amdt. dated January 02, 2007
Reply to Office action of November 15, 2006

Amendments to the Specification:

Please replace the “Abstract of Disclosure” section with the following context:

“A ~~novel~~ flat panel DMFC (direct methanol fuel cell) includes an integrated cathode electrode sheet; a membrane electrode assembly (MEA) unit; an intermediate bonding layer; an integrated anode electrode sheet; and a fuel container. The integrated cathode/anode electrode sheets are manufactured by using ~~PCB~~ printed circuit board (PCB) compatible processes.”

Please replace the “Brief Description of Drawings” section with the following context:

The accompanying drawings are included to provide a further understanding of the invention, and are incorporated in and constitute a part of this specification. The drawings illustrate embodiments of the invention and, together with the description, serve to explain the principles of the invention. In the drawings:

Fig.1 is a plain view of the conventional Direct Methanol Fuel Cell;

Fig.2 is a cross-sectional view of the conventional Direct Methanol Fuel Cell along line I-I of Fig.1;

Fig.3 is a perspective, exploded diagram illustrating a flat panel Direct Methanol Fuel Cell with five serially connected basic cell units in accordance with one preferred embodiment of the present invention; and

Fig.4 to Fig.12 illustrate a method for fabricating integrated thin cathode electrode sheet and integrated thin anode electrode sheet of the DMFC according to this invention[[.]] ; wherein

Fig. 4 depicts a CCL (copper clad laminate) substrate;

Fig. 5 shows the CCL substrate with drilled through holes;

Fig. 6 depicts a chemically deposited copper layer covering the surface and exposed interior sidewalls of the CCL substrate;

Fig. 7 shows a patterned resist formed on the CCL substrate;

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Fig. 8 shows an electroplated copper layer on the CCL substrate covered with an electroplated tin/lead composite layer;

Fig. 9 represents the step of the removal of the patterned resist;

5 Fig. 10 represents the etching process to remove the copper layer not covered by the tin/lead composite layer;

Fig. 11 shows a solder resist layer; and

Fig. 12 shows an optional conduction protection layer.